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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,585	07/11/2003	Donald Albert Paquet JR.	FA1048USNA	3692
23906 7590 08/07/2008 E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1122B 4417 LANCASTER PIKE WILMINGTON, DE 19805				
EXAMINER CHEUNG, WILLIAM K				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
08/07/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-Legal.PRC@usa.dupont.com

### Office Action Summary

**Application No.**

10/617,585

**Applicant(s)**

PAQUET ET AL.

**Examiner**

WILLIAM K. CHEUNG

**Art Unit**

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 May 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.  
4a) Of the above claim(s) 2-4 and 22-25 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 5-21, 26-30 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/5508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. In view of the amendment filed May 5, 2008, claims 1-30 are pending. Claims 2, 4, 22-25 are drawn to non-elected subject matter. Claims 1, 3, 5-21, 26-30 are examined with merit.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 3, 5-21, 26-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 (line 10-12), the recitations "0.01% to 10% by weight" are considered indefinite. In view of the recitation "consisting of" (claim 1, line 7), the total of weight % should be 100 percent. Is there any missing components?

Claims 28, 30 (line 1), the recitations "mono-" is considered indefinite. There is insufficient antecedent basis for these limitations in the claims.

Applicant's arguments filed May 5, 2008 have been fully considered but they are not persuasive. Applicants argue that "a crosslinkable component that consists of one or more non-functional acrylate and one or more functional methacrylate, where the

crosslinkable component may optionally also consist of low percentage of the total crosslinkable component by weight of functional acrylates and/or non-functional methacrylates. Optional components and ranges of percent by weight composition, even in a "closed" set are permitted, and this kind of claim language is recognized and has been allowed in the past." However, applicants' argument is not supported by claim 1 as written. Applicants must recognize that claim 1 (line 7), recites "a monomer mixture consisting of...", not "a crosslinkable component consisting of". On the contrary, claim 1 (line 2) clearly recites "crosslinkable component comprises".

Regarding claim 28, the recitation "mono" must be supported by claim 1 in order to provide support for the antecedent basis for the recitation "mono" of claim 28. Antecedent basis can not be supported by applicants' specification as argued.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 5-11, 13-21, 26-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Rink et al. (US 6,013,739) for the reasons adequately set forth from paragraph 7 of the office rejection of January 4, 2008.

1. (Currently Amended) A coating composition comprising crosslinkable and crosslinking components, wherein said crosslinkable component comprises:

a copolymer having on an average 2 to 25 crosslinkable groups selected from the group consisting of hydroxyl, acetoacetoxy, carboxyl, primary amine, secondary amine, epoxy and a combination thereof; a weight average molecular weight ranging from about 1000 to 4500; a polydispersity ranging from about 1.05 to 2.5; wherein said copolymer is polymerized from a monomer mixture consisting of one or more non-functional acrylate monomers and one or more functional methacrylate monomers provided with said functional groups, ~~or said monomer mixture also consisting of~~ and optionally one or both of: (i) 0.01% to 10% by weight of one or more functional acrylate monomers provided with said functional groups and (ii) 0.01% to 10% by weight of one or more non-functional methacrylate monomers; and

wherein said crosslinking component for said crosslinkable groups is selected from the group consisting of polyisocyanate, polyamine, ketimine, melamine, epoxy, polyacid and a combination thereof.

26. (Currently Amended) A coating composition comprising crosslinkable and crosslinking components, wherein said crosslinkable component comprises:

a copolymer having on an average 2 to 25 crosslinkable groups selected from the group consisting of hydroxyl, acetoacetoxy, primary amine, secondary amine, and a combination thereof; a weight average molecular weight ranging from about 1000 to 4500; a polydispersity ranging from about 1.05 to 2.5; wherein said copolymer is polymerized from a monomer mixture consisting of one or more non-functional acrylate monomers and one or more functional methacrylate monomers provided with said functional groups, ~~or said monomer mixture also consisting of~~ and optionally one or both of: (i) 0.01% to 10% by weight of one or more functional acrylate monomers and (ii) 0.01% to 10% by weight of one or more functional methacrylate monomers provided with said functional groups; and

wherein said crosslinking component for said crosslinkable groups is selected from the group consisting of polyisocyanate, ketimine, melamine, and a combination thereof.

Rink et al. (col. 18-19, claim 1, col. 9, line 29-41) claim a coating composition comprising copolymers containing hydroxyl groups as a crosslinkable component as

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claimed, and polyisocyanate as a crosslinking component. Rink et al. (col. 9, line 29-41) clearly disclose the molecular weight and polydispersity properties as claimed.

Regarding the processing related limitations of claims 17, 18, and 21, they do not carry much weight in the patentability of the claimed coating composition unless applicants can provide proof that the claimed processing related limitations would impart unique features onto the claimed coating compositions.

Regarding the Tg limitation of claim 6 and the VOC limitation of claim 7, in view of the substantially identical composition as claimed and the composition as disclosed in Rink et al., the examiner has a reasonable basis that the claimed Tg and the claimed VOC properties are inherently possessed in Rink et al.

In view of the reasons set forth above, Claims 1, 3, 5-11, 13-21, 26-30 are anticipated.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rink et al. (US 6,013,739) in view of Roesler et al. (US 2003/0232942 A1), for the reasons adequately set forth from paragraph 9 of the office rejection of January 4, 2008.

Rink et al. (col. 18-19, claim 1, col. 9, line 29-41) claim a coating composition comprising copolymers containing hydroxyl groups as a crosslinkable component as claimed, and polyisocyanate as a crosslinking component. Rink et al. (col. 9, line 29-41) clearly disclose the molecular weight and polydispersity properties as claimed.

The difference between the invention of claim 12 and Rink et al. is that Rink et al. are silent on a coating composition comprising isocyanatopropyl trimethoxy silane.

Roesler et al. (abstract; 0061) disclose polyurethane coating compositions that are very similar to the polyurethane coating compositions of Rink et al., in that both disclose the use of polyols, and polyisocyanates for preparing polyurethane based coating compositions. In view that both Roesler et al. and Rink et al. are in the field of endeavors of developing novel polyurethane coating compositions, it would have been

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obvious to one of ordinary skill in art to incorporate the isocyanatopropyl trimethoxy silane teaching of Roesler et al. (page 5, 0067) into composition teachings in Roesler et al. to obtain the invention of claim 12, motivated by the expectation of success of developing a coating system that is moisture curable (page 1, 0001; page 5, 0069-0074).

### ***Response to Arguments***

Applicant's arguments filed October 18, 2007 have been fully considered but they are not persuasive. Applicants argue that Rink et al. are silent on the combination of non-functional acrylate(s) with functional methacrylate(s) because Rink et al. do not teach the combination of non-functional acrylate(s) with functional methacrylate(s) in the form of a copolymer. Applicants fail to recognize that Rink et al. (col. 18, claim 1, (a) and (c)) clearly disclose functional methacrylates and non-functional acrylate as defined by applicants' specification (page 7) in a copolymer in view that Rink et al. (col. 18, line 22-23) clearly disclose "reaction product obtained by polymerizing".

The **non-functional acrylate monomer** can be provided with one or more groups selected from the group consisting of linear C1 to C20 alkyl, branched C3 to C20 alkyl, cyclic C3 to C20 alkyl, bicyclic or polycyclic C5 to C20 alkyl, aromatic with 2 to 3 rings, phenyl, C1 to C20 fluorocarbon, and a combination thereof. The **functional methacrylate monomer** is provided with one or more groups selected from the group consisting of hydroxyl, carboxyl, acetoacetoxy, primary and secondary amine, epoxy and a combination thereof.

Some of the one or more **non-functional acrylate monomers** in the monomer mixture include methyl acrylate, ethyl acrylate, propyl acrylate, butyl acrylate, pentyl acrylate, hexyl acrylate, octyl acrylate, nonyl acrylate, isodecyl acrylate, and lauryl acrylate; branched alkyl monomers, such as isobutyl acrylate, t-butyl acrylate and 2-ethylhexyl acrylate; and cyclic alkyl monomers, such as cyclohexyl acrylate, methylcyclohexyl acrylate, trimethylcyclohexyl acrylate, tertiarybutylcyclohexyl acrylate and isobomyl acrylate. Isobomyl acrylate and butyl acrylate are preferred.



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Some of the specific **functional methacrylate monomers** in the monomer mixture can include hydroxyalkyl methacrylates, such as hydroxyethyl methacrylate, hydroxy propyl methacrylate, hydroxyisopropyl methacrylate, hydroxybutyl methacrylate; aminoalkyl methacrylates, such as tertiarybutylaminoethyl methacrylate and N-methylaminoethyl methacrylate; glycidyl methacrylate, methacrylic acid and acetoacetoxymethyl methacrylate. Hydroxyethyl methacrylate and hydroxybutyl methacrylate are preferred.

Regarding the claimed "0.01 to 10% by weight" of components (i) and (ii), the examiner has a reasonable basis to believe that the claimed range actually has a range of "0.01 to 50% by weight" because in view of the recitation "consisting of" of claim 1 excludes other components, and that (i) and (ii) are in equal amount. Therefore, the examiner has a reasonable basis to interpret the range as "0.01 to 50% by weight".

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K. Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov> you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/William K Cheung/  
Primary Examiner, Art Unit 1796

William K. Cheung, Ph. D.

Primary Examiner

July 31, 2008

